



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/667,881

09/22/2003

Manish Mangal

2404

1159

28005

7590

12/02/2008

SPRINT

6391 SPRINT PARKWAY

KSOPHT0101-Z2100

OVERLAND PARK, KS 66251-2100

EXAMINER

BARQADLE, YASIN M

ART UNIT

PAPER NUMBER

2456

MAIL DATE

DELIVERY MODE

12/02/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/667,881	Applicant(s) MANGAL ET AL.	
	Examiner YASIN M. BARQADLE	Art Unit 2456	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/09/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Applicant's arguments filed on September 09, 2008 have been fully considered but are not deemed persuasive.

Response to Arguments

In essence the Applicant argues "...that Adelman does not teach or suggest the feature of sending the keepalive period in a response to a received keepalive message" (pages 3-4).

The Examiner disagrees. For example, Adelman teaches calculating adaptive keepalive period based on the received client keepalive message (col. 8, lines 15-23 and col. 13, lines 20-41).

Adelman further teaches The "client keepalive" packets contain a monotonically increasing sequence number which is used to measure packet loss in the system and to adjust the probability of packet loss value which is used to adjust the adaptive keepalive interval (col. 13, lines 32-36). Adelman also teaches "Each client includes a sequence number in its "client keepalive" packet. When the master gets this keepalive packet for client "x" he makes the following calculations: ... The resulting value of "n" is the adaptive keepalive interval which the master then sends to all of the cluster members to use in determining how often they are to send their "Client keepalive" message."(Col.

Art Unit: 2456

13, lines 42 to col. 14, lines 13). Therefore, Adelman's sending the calculated keepalive period is based on received client keepalive message.

The Applicant admits that "Adelman teaches that master and client devices are each arranged to periodically send keepalive message to each other. When a client sends a keepalive message to the master, the master determines packet loss and establishes a new keepalive interval." page 4 second paragraph, but argues "However, Adelman does not teach that the master sends that new keepalive interval in a response to the keepalive message received from the client." There is no such limitation of sending new keepalive interval in response to keepalive message in the claims." The examiner maintains that Adelman's teaching of calculating adaptive keepalive period based on the received client keepalive message as explained above meets the argued limitation.

- Claims 1-17 and 19-26 are presented for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

Art Unit: 2456

skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,3, 4, 7-10, 13, 14-15, 19,25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adelman et al. (US 6078957), hereinafter "Adelman" in view of Fleming US PUB. (20020152446).

As per claims 1 and 3, Adelman teaches a method comprising:

receiving a keepalive message from a client (col. 8, lines 14-16 and col. 9, lines 3-5);

determining a measure of network load (packet loss is a measure of network load that is determined by the master, "... master calculates and stores a packet loss average value using the sequence number of the client keepalive message and the calculated adaptive keepalive interval." column 8, lines 15-23);

selecting a keepalive period (based on packet loss, an adaptive keep alive period is calculated," ... the master calculates and stores a packet loss average value using the sequence number of the client keepalive message and the calculated adaptive [i.e. changes the] keepalive interval", column 8, lines 20-23);

reporting the selected keepalive period to the client station in a response to the received keepalive message (keepalive periods are calculate and reported to clients based on received keepalive messages from the client column 8, lines 31-33 and column 13, line 42 to col. 14 lines 3); and

Art Unit: 2456

the client station responsively sending a keepalive message to a presence server at a time determined based on the selected keepalive period (client sends keep alive messages with updated adaptive keepalive interval, "The non-master cluster members (clients) must also send keepalive message and ..." Column 9, lines 2-3 in conjunction with, "... when a client gets a master keepalive message 890 it updates its adaptive keepalive interval 891 ...", Column 9, lines 4-6).

Although Adelman shows substantial features of the claimed invention including selecting a keepalive period on measure of packet loss, he does not explicitly show where the keepalive period is based on network load. Nonetheless, this feature is well known in the art and would have been an obvious modification of the system disclosed by Adelman, as evidenced by Fleming.

In analogous art, Fleming disclose adjusting heartbeat timeouts (keepalive period) based on observed conditions such network congestions (abstract and paragraph 0024). Giving the teaching of Fleming, a person of ordinary skill in the art would have readily recognized the desirability and the advantage of modifying Adelman by employing the adaptive heartbeat system of Fleming in order to adaptively adjust heartbeat timeouts (keepalive) based on to observed network conditions. In this way proper corrective action can be taken to minimize potential network failures.

Art Unit: 2456

Adelman further teaches the presence server (cluster master, which is also cluster member, "... each of the cluster members is a computer system...", column 5, line 22; acting as master) querying a controller (has controller, "... and two Intel Ethernet controllers," column 5, line 24) that has access to network load information (FIG. 1 in conjunction with FIG. 4, FIG. 1 Item 110 is the cluster one ether net connected to other network units. To get the sequence number master must have queried and obtained the packet from the Ethernet controller.).

For Claim 4: A presence server (master of the cluster) in a communication network (see FIG. 1, item 110, in conjunction with column 5, line 16-17, "...will be described as a cluster whose applications may be VPN tunnel...", which indicates that FIG. 1, Item 110 is a cluster), comprising:

a first module (see FIG. 8B, item 830, a module) arranged to receive keepalive messages from at least one client station (master got client keepalive); a second module (a second module, see FIG. 8B, item 835) arranged to select a keepalive period (FIG. 8B, Item 835, "CALCULATE AND STORE PACKET LOSS AVERAGE (USING SEQUENCE NUMBER OF KEEP ALIVE AND ADAPTIVE KEEPALIVE INTERVAL)", Packet average loss is the measure of network load, and adaptive keepalive interval is keepalive period based on network load); a third module (FIG. 8C, item 851) arranged to report the

Art Unit: 2456

selected keepalive period to the at least one client station (FIG. 8C, item 851, "BROADCAST MASTER KEEPALIVE CONTAINING CLUSTER MEMBER LIST AND ADAPTIVE KEEPALIVE INTERVAL").

As to the keepalive period being based on network load see the rejection on claim 1 and 3 above.

For claim 7: The presence server of claim 4 (see supra for claim 4 discussion), wherein the presence server is coupled to a controller (a master which is also cluster member has two Ethernet controllers, "each of the cluster members is a computer system having an Intel motherboard, two Intel Pentium processors, a 64 megabyte memory and two Intel Ethernet controllers,..."), the controller keeping track of network load information (the controller receives the packets, therefore controller keeps track of packet sequence numbers, which in turn determine network packet loss-network load, "... when the master gets a 'client keepalive message' (that is one from a non-master cluster member) 830 ... master calculates and stores a packet loss average value using sequence number of the client keepalive message and the calculated adaptive keepalive interval.", Column 8, lines 15-23).

For claim 8: The presence server of claim 4 (see supra for claim 4 discussion), wherein the presence server is embedded with a controller (a master which is also cluster member has two Ethernet controllers that are present on the mother board or attached to mother board, i.e. they are embedded, "each of the

Art Unit: 2456

cluster members is a computer system having an Intel motherboard, two Intel Pentium processors, a 64 megabyte memory and two Intel Ethernet controllers.... “) that keeps track of network load information (the controller receives the packets with packet sequence number, therefore controller keeps track of packet sequence numbers, which in turn determine network packet loss, which is a measure of network load, "... when the master gets a 'client keepalive message' (that is one from a non-master cluster member) 830 ... master calculates and stores a packet loss average value using sequence number of the client keepalive message and the calculated adaptive keepalive interval.", column 8, lines 15-23).

For claim 9: Adelman teaches a system comprising:

at least one client station (FIG. 4, Items 405-409 as non-master cluster members); a presence server (Master acting as presence server and for description of master formation please refer to FIG. 6 - 8A, in conjunction with reference to column 6, line 40 - column 8, line 13); the presence server receiving a keepalive message from the at least one client station (col. 8, lines 14-16 and col. 9, lines 3-5);

the presence server determining a keepalive period (keepalive period is determined by master based on packet loss, which is a measure of network load, "... when the master gets a 'client keepalive message' (that is one from a non-master cluster member) 830 ... master calculates and stores a packet loss

Art Unit: 2456

average value using sequence number of the client keepalive message and the calculated adaptive keepalive interval.", column 8, lines 15-23) based on network load (packet loss rate is a measure of network load) and sending an indication of the keepalive period to the at least one client station in a response to the keepalive message (col. 13, lines 42 to col. 14, lines 13)(FIG. 8C, item 851, "BROADCAST MASTER KEEPALIVE CONTAINING CLUSTER MEMBER LIST AND ADAPTIVE KEEPALIVE INTERVAL");

the at least one client station sending keepalive signals according the keepalive period (See FIG. 8H, Item 912, "SEND CLIENT KEEP ALIVE TO MASTER CONTAINING MONOTONICALLY INCREASING SEQUENCE # (FOR MEASURING NETWORK PACKET LOSS" in conjunction with column 9, lines 13-17, "Each client also has a periodic timer which is adaptive to the network packet loss value send by the master which requires the client to send a client keepalive message (containing a monotonically increasing numeric value) to the master periodically").

As to the keepalive period being based on network load see the rejection on claim 1 and 3 above.

For claim 10: The system of claim 9 (see supra for claim 9 discussion), further comprising a controller that has access to network load information (FIG. 1 in conjunction with FIG. 4, FIG. 1 Item 110 is the cluster one ether net connected

Art Unit: 2456

to other network units. To get the sequence number master must have queried and obtained the packet from the Ethernet controller.).

For claim 13: The communication network of claim 9 is a packet-switched network (see FIG. 1, Item 110 the cluster connecting to internet 107 through communication link 109, It is well known that internet is a packet-switched network).

For claims 14 and 15: A method comprising: sending a first keepalive message from a client station to a presence server (FIG. 8B, Item 830, "MASTER [master is presence server] GOT CLIENT KEEPALIVE"); selecting a keepalive period based on a measure of network load (FIG. 8B, item 835, "CALCULATE AND STORE PACKET LOSS AVERAGE (USING SEQUENCE NUMBER OF KEEPALIVE AND ADAPTIVE KEEPALIVE INTERVAL", the packet loss average is network load and keepalive period is changed based on this load)); reporting the selected keepalive period to the client station" (FIG. 8C, "BRAODCAST MASTER KEEPALIVE CONTAINIGN CLUSTER MEMBER LIST AND ADAPTIVE KEEPALIVE INTERVAL"); using the selected keepalive period to determine when the client station should send a next keepalive message to the presence server (See FIG. 8H, Item 912, "SEND CLIENT KEEP ALIVE TO MASTER CONTAINING MONOTONICALLY INCREASING SEQUENCE # (FOR MEASURING NETWORK PACKET LOSS" in conjunction with column 9, lines 13-17, "Each client also has a periodic timer which is adaptive to the network packet loss value sent by

Art Unit: 2456

the master ..."); sending the next keepalive message from the client station to the presence server (client, i.e. non-master sends the keep alive message to master, i.e. presence server, "... which requires the client to send a client keepalive message (containing a monotonically increasing numeric value) to the master periodically (see FIG. 8H) [item 912].", column 9, lines 14-17).

As to the keepalive period being based on network load see the rejection on claim 1 and 3 above.

For claim 19: Adelman teaches a client station (Cluster member as described in column 5, lines 22) in a communication network (see FIG. 1 Item 107), the client station comprising: a receiver (column 5, line 24, "... two Ethernet controllers", which implies a ether net phy with a receiver); a transmitter (column 5, line 24, "... two Ethernet controllers", which implies a ether net phy with a transmitter); a timer (column 9, lines 13-16, "Each client also has a periodic timer which is adaptive to the network packet loss value sent by the master which requires the client to send a client keepalive message ..."); at least one processor(column 5, line 22, "... two Intel Pentium processors"); data storage holding program instructions (FIG. 2, Item 217, CD-ROM medium in conjunction with column 4, line 42, "... a CD-ROM drive unit 217. The CD-ROM drive unit 217 can read a CD-ROM medium 219 which typically contains program 221 ..."); the program instructions being executable by the at least one processor to send a keepalive message through the transmitter, and to

Art Unit: 2456

receive through the receiver a response to the keepalive message, the response containing information defining a keepalive period, the keepalive period being selected based on network load (column 9, lines 13-16 and col. 13, lines 42 to col. 14, lines 13); and

the program instructions being executable by the at least one processor, in response to receiving information defining a keepalive period wherein the keepalive period is selected based on network load (column 9, lines 13-16, "Each client also has a periodic timer which is adaptive to the network packet loss value [network packet loss value is a measure of network load) sent by the master which requires the client to send a client keepalive message ..."), to: (i) set the timer according to the keepalive period(column 9, lines 13-16, "Each client also has a periodic timer which is adaptive to the network packet loss value [network packet loss value is a measure of network load) sent by the master which requires the client to send a client keepalive message ..."); (ii) send a new keepalive message through the transmitter when the timer expires (column 9, lines 13-16, "Each client also has a periodic timer which is adaptive to the network packet loss value [network packet loss value is a measure of network load) sent by the master which requires the client to send a client keepalive message ...").

As to the keepalive period being based on network load see the rejection on claim 1 and 3 above.

Art Unit: 2456

For claim 25: A presence server in a communication network comprising: a database, the database maintaining a list client stations that are connected to the network (column 8, lines 31-33, "As indicated above the master periodically sends out a master keepalive message containing the cluster member list ...", since cluster member list is being sent, they must be stored in a database); a timer (column 9, lines 13-16, "Each client also has a periodic timer which is adaptive to the network packet loss value sent by the master which requires the client to send a client keepalive message ..."); wherein the presence server (master is the presence server) is programmed to: receive keep alive messages from at least one client station (See FIG. 8B, item 830, "MASTER GOT CLIENT KEEPALIVE"), select a keepalive period for the at least one client station based on a measure of network load (FIG. 8B, Item 835, "CALCULATE AND STORE PACKET LOSS AVERAGE (USING SEQUENCE NUMBER OF KEEPALIVE AND ADAPTIVE KEEPALIVE INTERVAL", where packet loss average is measure of network load based on which keepalive interval is determined.), report the selected keepalive period to the at least one client station in a response to the received keepalive message (col. 13, lines 42 to col. 14, lines 13) (FIG. 8C, item 851, "BORADCAST MASTER KEEPALIVE CONTAINING CLUSTER MEMBER LIST AND ADAPTIVE KEEPALIVE INTERVAL"), and drop the at least one client station from the database (FIG. 8E, ITEM 871, "DELETE CLIENT FROM CLUSTER DATA STRUCTURE") if the presence server does not receive new keepalive message within the selected keepalive period from the at least one

Art Unit: 2456

client station (FIG. 8E, ITEMS 870, WATCHDOG TIMER FOR A CLIENT EXPIRES", which means presence server did not receive a keepalive message from the client.).

As to the keepalive period being based on network load see the rejection on claim 1 and 3 above.

For claim 26: A method comprising: sending a first keepalive message from a client station to a presence server (See FIG. 8B, item 830, "MASTER GOT CLIENT KEEPALIVE", which means client must have sent a keepalive message); selecting a keepalive period based on a measure of network load (FIG. 8B, Item 835, "CALCULATE AND STORE PACKET LOSS AVERAGE (USING SEQUENCE NUMBER OF KEEPALIVE AND ADAPTIVE KEEPALIVE INTERVAL", where packet loss average is measure of network load based on which keepalive interval is determined.); reporting the selected keepalive period to the client station in a response to the first keepalive message (col. 13, lines 42 to col. 14, lines 13) (FIG. 8C, item 851, "BORADCAST MASTER KEEPALIVE CONTAINING CLUSTER MEMBER LIST AND ADAPTIVE KEEPALIVE INTERVAL"); using the selected keepalive period to determine when the client station should send a next keepalive message to the presence server (FIG. 8B, item 837, ".RESET WATCHDOG FOR THIS CLIENT", when this timer expires, i.e. with in adaptive keepalive interval if client does not send a keepalive message, client will be removed) ; updating a database of the presence server

Art Unit: 2456

based on whether the client station has sent a next keep alive message to the presence within the selected keepalive period (FIG. 8E, item 870, WATCHDOG TIMER FOR CLINET EXPIRES", if keepalive message is received by master it watchdog timer would have been reset, See FIG. 8B, item 837 in conjunction with item 830).

As to the keepalive period being based on network load see the rejection on claim 1 and 3 above.

5. Claims 2, 6, 12, 17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Adelman and Fleming et al. in view of Harsch (US 6212175 B1).

For claims 2, 6, and 12 Adelman et al and Fleming teach everything except client being wireless mobile workstation, or presence server present in wireless communication network. The general concept of client being wireless workstation or presence server being present in wireless communication network is well known in the art as shown in Figure 1 use of MOBILE UNIT as client or presence server being present in a wireless network as indicated by Harsch (see the Figure 1, items 66, 66a, 66b, etc., which are mobile units which are present in a wireless communication network (see item 67 indicating being wireless antenna) and presence server being Item 60, Host computer (Harsch)). It would have been obvious to one in skilled in the art at the time of the invention to modify Adelman et al and Fleming to have a wireless mobile

Art Unit: 2456

workstation and presence server in a wireless communication network in order to sustain TCP connection as taught in Harsch (see title, "METHOD TO SUSTAIN TCP CONNECTION").

For claim 17, Adelman et al teaches all the limitations of claim 17 except serving one or more wireless mobile subscribers in a wireless communication system. The general concept of serving one or more wireless mobile subscribers in a wireless communication system is well known in the art as illustrated by Harsch (FIG. 1, items 66, 66a, and 66b, several mobile units serving various subscribers in a wireless communication system). It would have been obvious to one in skilled in the art at the time of the invention to modify Adelman et al to serving one or more wireless mobile subscribers in a wireless communication system in order to serve various mobile stations in a wireless communication system as taught in Harsch (see FIG. 1, serving various mobile units items 66, 66a, and 66b in a wireless communication network as shown in FIG. 1).

5. Claims 20, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adelman and Fleming et al. in view of Harsch (US 6212175 B1).

For claim 20: A system for dynamically determining keepalive periods in a wireless communication network, comprising: at least one base station (this

Art Unit: 2456

claim limitation is not taught); at least one client station (FIG. 4, Items 405-409 as non-master cluster members); a presence server (FIG. 4, Item 403 as master, acting as presence server); A packet switched network (see FIG. 4, Items 411 and 107, INTERNET is known to be packet switched network); The presence server (master, which will be one of items 403-409) being capable of communicating with at least one client station (All items 403-409 which is not master are clients) through the packet-switched network (FIG. 8B, item 830, "MASTER GOT CLIENT KEEPALIVE", since keepalive is a packet, it is implicit that there must be packet-switched network); the presence server determining a keepalive period (keepalive period is determined by master based on packet loss, which is a measure of network load, "... when the master gets a 'client keepalive message' (that is one from a non- master cluster member) 830 ... master calculates and stores a packet loss average value using sequence number of the client keepalive message and the calculated adaptive keepalive interval.", column 8, lines 15-23) at least one mobile subscriber (this claim limitation is not taught by Adelman et al) based on network load (packet loss rate is a measure of network load) and the presence server reporting the selected keepalive period (FIG. 8C, item 851, "BROADCAST MASTER KEEPALIVE CONTAINING CLUSTER MEMBER LIST AND ADAPTIVE KEEPALIVE INTERVAL") to the at least one mobile subscriber (this limitation is not taught by Adelman et al) through the packet-switched network (see FIG. 4, Items 411 and 107, INTERNET is known to be packet switched network);

Art Unit: 2456

Adelman et al teaches all the claim limitations as discussed above except for coupling a mobile client(s) through a base station to a packet switched network server. The general concept of coupling mobile user through a base station to a packet switched network server is well known in the art as illustrated by Harsch (see FIG. 1, items 66, 66a, and 66b mobile stations, coupled to server (host computer) through bases station 54a, wired line 52 (see page 4, Para 0037, lines 4-6, "The network backbone 52 may be a hardwired data communication path made of twisted pair cable, shielded coaxial cable or fiber optic cable, ...") to item 60, host computer). It would have been obvious to one in skilled in the art at the time of the invention to modify Adelman et al to couple mobile client(s) through a base station in order to make mobile units to be part of a cluster as taught in Harsch and Adelman (Harsch: see FIG. 1, mobile units 66, 66a, and 66b connected to ° host computer, 60; Adelman: FIG. 8F, showing joining of client into a cluster.). For claim 22: The system of claim 20 (see supra for claim 20 discussion), wherein the presence server (cluster master, which is also cluster member, "... each of the cluster members is a computer system ...", column 5, line 22; acting as master) determines measures of network load (determined by using the sequence number of keepalive and keepalive interval, Adelman: see FIG. 8C, item 835; sequence number is the only variable to determine the network load.) by querying a controller that has access a measure of network load (FIG. 1 in conjunction with FIG. 4, FIG. 1 Item 110 is the cluster one ether net connected to other

Art Unit: 2456

network units. To get the sequence number master must have queried and obtained the packet from the Ethernet controller.).

As to the keepalive period being based on network load see the rejection on claim 1 and 3 above.

For claim 24: The system of claim 20 (see supra for claim 20 discussion), wherein the at least one mobile subscriber (after Harsch modification of alderman as discussed supra, mobile station is non-master client) upon receiving the selected keepalive period (Adelman: FIG. 8G, Item 890, "CLIENT GOT MASTER KEEPALIVE"), sends the next keepalive message at a time determined by the selected keepalive period Item 891, "UPDATE ADAPTIVE KEEPALIVE INTERVAL (CALCULATED BY MASTER)", updating the keepalive interval has the effect of sending the next keepalive message according to the updated keepalive interval.).

6. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adelman et al and Fleming in view of Rashid et al (US 2004/0230661).

For Claim 5 and 11 Adelman et al and Fleming teach all the claim limitations except for polling (polling for claim 5) and pushing (for claim 11) the network load information. The general concept of pushing and polling information is well known in the art as shown in Figure 3, following item 302 to decide

Art Unit: 2456

whether push or pull. It would have been obvious to one skilled in the art at the time of the invention to modify Adelman et al and Fleming to push or pull network information as taught in Rashid et al (see Page 3, Para 0036-0042 for push based process and Para 0043-0045 for pull based process) in order to implement authentication process and to provide subscriber with up-to-date information.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adelman et al and Fleming in view of rfc2543.

For claim 16 Adelman et al and Fleming teach all claim limitations except SIP message is being used as keepalive message. The general concept of using an SIP message as keepalive message is well known in the art as illustrated Internet draft session timer (page 3, second Para, "... this extension defines a keepalive mechanism for SIP sessions."). It would have been obvious to one skilled in the art at the time of the invention to modify Adelman et al and Fleming to use SIP message as keepalive message in order to create sessions as taught in RFC 2543 (RFC 2543, page 1, Abstract, first line, "The Session Initiation Protocol (SIP) is an application-layer control (signaling) protocol for creating, modifying and terminating sessions with one or more participants", which teaches SIP can be used to create sessions).

Art Unit: 2456

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adelman et al and Fleming in view of Aharoni et al (US 6014694).

9. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adelman et al and Fleming view of Harsch and Rashid et al.

For claim 21, Adelman et al, Fleming and Harsch (as discussed supra in claim 20) teach all claim limitations, except polling the network load information from the controller. The general concept of polling information is in well known in the art as illustrated in Rashid: Figure 3, following item 302 to decide whether poll or push. It would have been obvious to one skilled in the art at the time of the invention to modify Adelman et al , Fleming and Harsch to poll the network load information in order to implement authentication process as taught in Rashid et al (Rashid: Page 3, Para 0043- 0045 for poll based process).

10. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adelman et al and Fleming in view of Harsch and Aharoni et al (US 6014694).

For claim 23, Adelman et al, Fleming and Harsch teach all the claim limitations except keeping track of the network bandwidth. The general concept of keeping track of network bandwidth is well known in the art as illustrated by Aharoni et al (Aharoni: FIG. 12, sender keeping (calculating) track of bandwidth as

Art Unit: 2456

shown in the top start item). It would have been obvious to one in skilled in the art at the time of invention to modify Adelman et al, Fleming and Harsch to keep track bandwidth use in order to determine new time to send as taught in Aharoni et al. (see, Aharoni: FIG. 12/2, item 160).

Conclusion

ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yasin Barqadle whose telephone number is 571-272-3947. The examiner can normally be reached on 9:00 AM to 5:30 PM.

Art Unit: 2456

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yasin M Barqadle/

Primary Examiner, Art Unit 2456